Claims

We claim:

1. In a process for producing a polyolefin film, the steps comprising:

a. providing a polymer mixture comprising a propylene selected from the group consisting of isotactic propylene homopolymer and isotactic propylene-ethylene co-polymer containing no more than 1.0 weight percent ethylene, and having incorporated therein:

a modifier selected from the group consisting of a resin and a rosin, in an amount within the range of 1 to 30 weight percent; and

b. forming said polymer mixture into a film layer.

2. The process of claim 1, wherein the amount of said modifier is within the range of 5 to 10 weight percent.

3. The process of claim 1, wherein the amount of said modifier is about 10 weight percent.

4. The process of claim 3, wherein said modifier is a hydrogenated hydrocarbon resin having a molecular weight of about 750 g/mol, a softening point within the range of 136° C to 140° C and a glass transition temperature of about 90° C.

5. The process of claim 3, wherein the propylene polymer mixture of step (a) is an isotactic propylene-ethylene co-polymer containing no more than 1.0 weight percent ethylene.

6. The process of claim 3, wherein the propylene polymer of step (a) is an isotactic propylene homopolymer.

7. The process of claim 4, further comprising the step of stretching said film layer in the machine direction and separately stretching said film layer in the transverse direction to produce a biaxially oriented polyolefin film.

8. The process of claim 4, wherein the isotactic propylene homopolymer is produced by the method of polymerizing propylene in the presence of a metallocene catalyst.

9. The process of claim 5, wherein said modifier is a hydrogenated hydrocarbon resin having a molecular weight of about 750 g/mol, a softening point within the range of 136° C to 140° C and a glass transition temperature of about 90° C.

10. The process of claim 5, further comprising the step of stretching said film layer in the machine direction and separately stretching said film layer in the transverse direction to produce a biaxially oriented polyolefin film.

11. The process of claim 5, further comprising the step of stretching said film layer in the machine direction and separately stretching said film layer in the transverse direction to produce a biaxially oriented polyolefin film.

12. The process of claim 5 wherein the isotactic propylene homopolymer is produced by the method of polymerizing propylene in the presence of a metallocene catalyst.

13. The process of claim 6 wherein the isotactic propylene homopolymer is produced by the method of polymerizing propylene in the presence of a metallocene catalyst.

14. The process of claim 6, wherein said modifier is a hydrogenated hydrocarbon resin having a molecular weight of about 750 g/mol, a softening point within the range of 136° C to 140° C and a glass transition temperature of about 90° C.

15. The process of claim 14, further comprising the step of stretching said film layer in the machine direction and separately stretching said film layer in the transverse direction to produce a biaxially oriented polyolefin film.

16. The process of claim 14 wherein the isotactic propylene homopolymer is produced by the method of polymerizing propylene in the presence of a metallocene catalyst.

17. In a polyolefin film, the combination comprising:

a. a film layer formed of a mixture of:

a propylene polymer selected from the group consisting of isotactic propylene homopolymer and an isotactic propylene-ethylene co-polymer containing no more than 1.0 weight percent ethylene, and

a modifier selected from the group consisting of a resin and a rosin; and

b. said modifier present in said mixture in a relative amount effective to produce a biaxially oriented polyolefin film capable of being stretched up to 9 times its original length in the machine direction and stretched in the transverse direction at a temperature equal to or less than about 166° C.

18. The combination of claim 17, wherein said modifier is a hydrogenated hydrocarbon resin having a molecular weight of about 750 g/mol, a softening point within the range of 136° C to 140° C and a glass transition temperature of about 90° C.

19. The combination of claim 18, wherein said modifier is present in said mixture in an amount within the range of about 1 to 30 weight percent.

20. The combination of claim 18, wherein said modifier is present in said mixture in an amount with the range of about 5 to 10 weight percent.

21. The combination of claim 18, wherein said modifier is present in said mixture in an amount of about 10 weight percent.